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Centralisation of Vascular Services and the Weekend Effect in Germany.

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Behrendt et al. should be congratulated on their work identifying worse in-hospital survival rates for patients treated for ruptured abdominal aortic aneurysm (rAAA) at the weekend in Germany.¹ The 'weekend effect' has received much attention since 2001, when it was first described in a population of Canadian patients undergoing repair of rAAA.

The study by Behrendt et al. contrasts sharply with a similar one from our group, which looked at the treatment of patients with acute AAA in the UK, finding no difference in mortality at the weekend when compared to patients operated on during the week.²

Ruptured AAA is perhaps the ideal condition to examine whether differences in service provision exist at the weekend, as successful rescue of a patient with rAAA requires rapid access to emergency department care; timely recognition of the condition; access to skilled anaesthetic and surgical teams and high-quality intensive care management following a successful procedure. Figures from randomized trials suggest that even in experienced centers around 35% die regardless of the intervention method. There is, however, mounting evidence that care of patients with a rAAA should be managed in a centralized manner.

Centralization of United Kingdom (UK) vascular services began following the identification in 2008 of higher mortality rates for elective AAA repair in the UK compared to Western Europe (7.9% vs 3.5%, respectively). The process can be viewed as successful, with 30-day mortality rates for elective AAA falling to 2.4% by 2012 and 1.1% by 2017, with only modest changes in the proportion treated with endovascular repair.

In contrast to UK vascular services, Germany still operates on a single acute hospital service. In 2004, minimum volume thresholds were outlined for certain inpatient treatments to reduce variability in treatment received across the 1600 acute care hospitals.³ Despite this, many hospitals have been found non-compliant, and a volume-outcome study has identified increased mortality for open repair of AAA in low-volume hospitals (7.8%, compared to 4.7% in high-volume hospitals).⁴

Interestingly, Behrendt et al. found no significant difference in mortality following endovascular repair of rAAA on the weekends. Regardless of time of day, endovascular repair of rAAA involves a large team of skilled individuals, is resource intensive and requires careful coordination. Continual availability of this crucial team could explain why no significant difference in outcomes were identified in this subset of patients. No

comment was made on whether these patients were treated in low or high-volume hospitals.

Transfer of patients with rAAA to an experienced center appears to be safe for the majority of patients, with studies from multiple countries supporting this view.⁵ There is also evidence for a volume-outcome relationship in the treatment of rAAA, with a meta-analysis finding a weighted odds ratio of 0.78 at a threshold of 15 cases per year.

Putting all of this together, we would argue that the contrasting results of Behrendt et al. from Germany and those of our own group in the UK make a strong argument in favour of centralization of aortic services, in Germany and elsewhere, with management of rAAA handled exclusively in high-volume centers and expeditious transfer of patients once identified.

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